

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A fuel cell system comprising:
 - a fuel cell for generating electric energy based on electrochemical reaction of hydrogen and oxygen;
 - a hydrogen supply apparatus for feeding hydrogen into said fuel cell;
 - a hydrogen supply path for introducing the hydrogen from said hydrogen supply apparatus into said fuel cell;
 - an off-gas circulation path for introducing an off-gas into said hydrogen supply path, said off-gas containing non-reacted hydrogen exhausted from said fuel cell without being consumed in said electrochemical ~~chemical~~ reaction among the hydrogen fed into said fuel cell;
 - off-gas circulating means for circulating said off-gas into said off-gas circulation path and also for mixing said off-gas with a main stream of hydrogen fed from said hydrogen supply apparatus;
 - main stream hydrogen amount detecting means for detecting a hydrogen amount in said main stream of hydrogen;
 - off-gas circulation amount detecting means for detecting a circulation amount of said off-gas; ~~and~~
 - impurity removing means for removing impurities not contributing to the electrochemical reaction from said off-gas circulation path,
 - wherein an operation of said impurity removing means is controlled based on a hydrogen concentration in said off-gas circulation path, ~~and~~

the hydrogen concentration in said off-gas circulation path is calculated based on the hydrogen amount in said main stream of hydrogen and the circulation amount of said off-gas,

said off-gas circulating means is disposed in said hydrogen supply path to suck and discharge said off-gas by utilizing entrainment caused by said main stream of hydrogen ejected from a nozzle, and

said off-gas circulation amount detecting means calculates the circulation amount of said off-gas based on a pressure difference between a suction side and a discharge side of said off-gas circulating means and also based on the hydrogen amount in said main stream of hydrogen.

2. (Original) The fuel cell system in accordance with claim 1, wherein

said off-gas circulating means is an ejector pump, and

said main stream hydrogen amount detecting means calculates the hydrogen amount in said main stream of hydrogen based on a pressure of said hydrogen supply path at an upstream side of said ejector pump and a pressure at a discharge side of said ejector pump, as well as based on an opening area of a nozzle of said ejector pump.

3. (Canceled)

4. (Original) The fuel cell system in accordance with claim 1, wherein a

hydrogen amount fed into said fuel cell is calculated based on the hydrogen concentration in said off-gas circulation path.

5. (Currently Amended) The fuel cell system in accordance with claim 1, wherein

the operation of said impurity removing means is controlled in such a manner that the hydrogen amount fed into said fuel cell satisfies a predetermined condition that is a requested stoichiometric value which is a stoichiometric value obtained from a requested power generation amount, when the stoichiometric value is defined as a value equivalent to the

hydrogen amount fed into said fuel cell divided by a hydrogen consumption amount obtained from a power generation amount of said fuel cell.

6. (Canceled)

7. (Original) The fuel cell system in accordance with claim 5, wherein said predetermined condition is a requested hydrogen concentration obtained from a requested power generation amount.

8. (Original) The fuel cell system in accordance with claim 1, wherein said off-gas circulating means has a function of variably controlling the circulation amount of said off-gas.

9. (Currently Amended) The fuel cell system in accordance with claim 8, wherein the circulation amount of said off-gas is controlled based on a hydrogen concentration in said off-gas circulation path in such a manner that the hydrogen amount fed into said fuel cell satisfies a predetermined condition that is a requested stoichiometric value which is a stoichiometric value obtained from a requested power generation amount, when the stoichiometric value is defined as a value equivalent to the hydrogen amount fed into said fuel cell divided by a hydrogen consumption amount obtained from a power generation amount of said fuel cell.

10. (Canceled)

11. (Original) The fuel cell system in accordance with claim 9, wherein said predetermined condition is a requested hydrogen concentration obtained from a requested power generation amount.

12. (New) The fuel cell in accordance with claim 1, wherein said off-gas circulating means is an ejector pump.